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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 08/997,202 | 12/23/97 | MYERS | G 1-5703 |

IM62/0719
MACMILLAN SOBANSKI AND TODD
ONE MARITIME PLAZA 4TH FLOOR
720 WATER STREET
TOLEDO OH 43604

EXAMINER

PIAZZA, G

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1733

DATE MAILED:

07/19/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/997,202

Applicant

Gerald L. Meyers

Examiner

Gladys Piazza

Group Art Unit
1733



☒ Responsive to communication(s) filed on Apr 21, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 14-24 is/are pending in the application

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 14-24 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Continued Prosecution Application

1. The request filed on April 21, 2000 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/997, 202 is acceptable and a CPA has been established. An action on the CPA follows.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 14 recites the limitation "the driveshaft" in lines 9 and 14. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend to --the unbalanced driveshaft--.

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 14, and 19-21 are rejected under 35 U.S.C. §103 as being unpatentable over admitted prior art and as conventional state of the art as evidenced by Duck et al. (U.S. Patent No 5,064,494), Challenger et al. (U.S. Patent No. 4,528,057) and Wakabayashi et al. (US Patent No. 4,293,363).

It is known to manufacture a driveshaft for use in a vehicular drive train assembly that is balanced for rotation about an axis by providing an unbalanced driveshaft, providing a balance weight, and providing adhesive material between the unbalanced driveshaft and the balance weight (specification p.2, lines 14-16).

It is noted that when a balanced weight is bonded with liquid adhesive to a driveshaft, portions of the adhesive will extend (or extrude outwardly, as in claim 19) from between the driveshaft and the balanced weight when the balanced weight is pressed against the drive shaft; this portion that extends from between the balanced weight and the driveshaft would cure prior to the portion of adhesive between the balanced weight and the driveshaft because it is exposed to the atmosphere.

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Furthermore, it is well known in the adhesive bonding art to provide for temporary initial bonding by employing quick setting adhesives or curing of adhesive portions with full bonding of the other adhesive portions occurring at a later state with a slower setting adhesive or adhesive portion as evidenced, for example by Duck, Challenger, and Wakabayashi. Duck discloses a process that uses microwave energy to quick set a portion of the adhesive for a windshield on a motor vehicle and to allow the remainder of the adhesive to set later in order to for the windshield to be reliably secured and moved along the manufacturing process before final curing (column 2, lines 20-35). Challenger discloses the need to assemble parts together in modern production lines or automation lines in as short a time as possible (column 1, lines 5-15). Challenger teaches that in adhesive bonding for manufacturing processes, the speed of manufacture is increased by quick setting or curing a first adhesive portion with heat and allowing for delayed setting or curing of the remainder adhesive so that the parts can be further processed during the delayed curing (column 1, lines 15-20 and column 2, lines 39-51). Wakabayashi discloses assembling vehicle components in mass-production lines where thermosetting adhesives are partially set or cured so that the parts can be further processed before all the adhesive portions are fully cured (column 2, lines 4-15).

Therefore, it would have been an obvious expedient to one of ordinary skill in the art to bond a balance weight to a driveshaft with an adhesive as shown by the admitted prior art by curing exposed adhesive portions prior to curing all the adhesive portions in order to speed up

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manufacture as is conventional in the bonding arts and exemplified by Duck, Challenger, and Wakabayashi.

As to claims 20 and 21, ultraviolet radiation and heat are both well known curing processes for adhesives and it would have been obvious to use ultraviolet radiation or heat in order to cure a portion of adhesive bonding a balanced weight to a drive shaft, only the expected results would be attained.

7. Claims 15-17, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Duck et al., Challenger et al., and Wakabayashi et al. as applied to claim 14 above, and further in view of Duggan (US Patent No. 5,601,494), Riebschleger (U.S. Patent No. 5,435,720) and Albrecht et al. (U.S. Patent No. 5,875,171).

The references are applied as discussed above in paragraph 6.

It is well known in the adhesive arts to provide a serrated outer surface when bonding two articles together in order to form a stronger bond with mechanical interlock.

Duggan discloses a method of adhesively securing a end fitting to a driveshaft where the end fitting is grooved in order to provide a stronger bond or mechanical interlock with the adhesive between the end fitting and the driveshaft (column 2, lines 5-11).

Riebschleger discloses bonding two articles together, a dental bracket to a tooth, where the dental bracket has a serrated outer peripheral surface (openings or notches added to the base) and excess adhesive extends (emanates) from the peripheral surface of the dental bracket (periphery of the base plate) and is directed up along the sides of the dental bracket for the

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purpose of providing a positive mechanical lock of the dental bracket to the adhesive (column 2, lines 30-50 and column 4, lines 4-25). As for claims 16 and 17, Riebschleger discloses a thin rim portion of the second article (flat base plate of dental bracket) which also has a serrated edge (notches) (column 3, 57-68). As for claim 23, the adhesive material extends from between the tooth and the outer surface of the dental bracket to provide the mechanical interlock.

Albrecht also discloses two articles, disk and spacer, adhesively bonded with a mechanical interlock provided by an appropriate texture on one of the articles for the improvement of the contact of the two surfaces (column 2, lines 45-55 and column 4, lines 3-9).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to bond a balance weight to a driveshaft as shown by the admitted prior art, duck Challenger and Wakabayashi and to provide balance weights of different shapes such as a thin rim and a serrated edge that improve the bonding or mechanical interlock of the articles as it is well known and exemplified by Duggan, Riebschleger, and Albrecht in order to increase the bond strength between the articles.

8. Claims 18, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Duck et al., Challenger et al., and Wakabayashi et al. as applied to claim 14 above, and further in view of Welsh et al. (U.S. Patent No. 5,778,737).

The references are applied as discussed above in paragraph 6.

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It is well known to provide a balanced weight with an inner surface that corresponds to the outer surface of the driveshaft when bonding balanced weights to driveshafts and to provide for an aperture on the weight.

As to claim 18, Welsh discloses a method of securing a balanced weight on a driveshaft where the weight is curved to conform to the outer diameter of the driveshaft (column 2, lines 1-3 and 49-53). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide for a balanced weight that conforms to the shape of the drive shaft as shown in Welsh when bonding a balanced weight to a driveshaft as shown by admitted prior art, Duck, Challenger, and Wakabayashi since it is well known to provide for corresponding shapes when bonding articles, particularly a weight and driveshaft, together.

As to claims 23 and 24, Welsh discloses providing an aperture in a balanced weight so that the adhesive material (molten aluminum) flows through the aperture such that a portion of the adhesive material extends over the outer surface of the balanced weight (the aluminum overflows, forming a "cap" over the surface of the weight) (column 3, lines 11-15). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use techniques that improve the adhesive bond of two articles such as an aperture in a balanced weight as shown by Welsh when bonding a balanced weight to a driveshaft as shown by admitted prior art, Duck, Challenger, and Wakabayashi since it is known to use balanced weights with apertures when bonding to driveshafts in order to form a stronger bonds.

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9. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Duck, Challenger, and Wakabayashi et al. as applied to claim 14 above, and further in view of Wolinski et al. (U.S. Patent No. 4,126,504).

The references are applied as discussed above in paragraph 6.

It is well known when joining two articles to apply an adhesive to one article and a catalyst or activator to the other article for the purpose of simplifying and speeding up the adhesion process.

Wolinski discloses a method of applying an activator to one article surface and an adhesive to another article surface for a wide range of applications in mass production (column 1, line 25-40 and column 2, line 66 to column 3, line 5). It would have been obvious to one having ordinary skill in the art at the time of the invention to use this method of joining two articles with an activator applied to one article and an adhesive applied to the other article when employing the method of bonding a balanced weight to a driveshaft as shown by admitted prior art in view of Duck, Challenger, and Wakabayashi, since it is well known to use a separate activator and exemplified by Wolinski in order to speed up the manufacturing process.

Response to Arguments

10. Applicant's arguments filed November 24, 1999 have been fully considered but they are not persuasive.

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The Applicant argues that the Duck and Challenger references are not analogous to the claimed invention. It is well known in the bonding arts to cure portions of adhesive bonding two articles together in order to secure the articles for further processing before curing all the portions of adhesive and the references Duck, Challenger and newly cited Wakabayashi are merely examples of employing this well known technique.

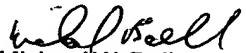
The Applicant argues that the Duck and Challenger references fail to teach moving a driveshaft and a balanced weight toward one another so a first portion of the adhesive is disposed between the driveshaft and the weight and a second portion of the adhesive extends from between the driveshaft and the weight. The rejection is based on the fact that when a balance weight is pressed against a driveshaft with liquid adhesive, a portion of the adhesive will extend from between the two articles. It is further noted that the second portion that is exposed to the atmosphere will cure prior to the unexposed portion.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Gladys Piazza** whose telephone number is (703) 305-1271.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball may be reached at (703)308-2058. The fax number for this group is (703) 305-7718.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700


Gladys Piazza

July 17, 2000